AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A signal monitoring and integrity checking system for use in ~~optical cross-connects~~ a Dense Wavelength Division Multiplexing (DWDM) network, comprising ~~the following elements~~:

an optical network including ~~at least one interconnect~~ a first asynchronous cross-connect and a second asynchronous cross-connect, ~~to connect~~ each for connecting an incoming link to an interconnecting link;

a first performance monitor for said first asynchronous cross-connect;

a second performance monitor for said second asynchronous cross-connect;

at least one first multi-cast means ~~to multi-cast~~ for multi-casting the input of said ~~at least one interconnect~~ first asynchronous cross-connect to at least one first monitor port on said ~~at least one interconnect~~ first asynchronous cross-connect, said first performance monitor communicating with said first monitor port; ~~and~~

at least one second multi-cast means for multi-casting the input of said second asynchronous cross-connect to at least one second monitor port on said second asynchronous cross-connect, said second performance monitor communicating with said second monitor port;

~~at least one~~ each of said performance monitors, ~~one connected to each at least one monitor port, such that said at least one performance monitor means can detect~~ for detecting ~~the line signalling rate,~~ protocol ~~and performance characteristics of any data carried thereon~~ and determining an error rate in accordance with said protocol;

a subsystem including at least one comparison system for comparing the outputs from said performance monitors to detect where performance impairment is introduced.

2. (Cancelled)

3. (Currently Amended) The system of claim [[2]] 1, further comprising a signalling means ~~to signal~~ for signaling results of said at least one comparison means to a maintenance subsystem.

4. (Currently Amended) The system of claim [[2]] 1, wherein said comparison ~~means~~ system is part of an Operation, Administration, Maintenance and Provisioning sub-system.

5. (Currently Amended) A method for signal monitoring and integrity checking in ~~an optical cross-connects~~ a Dense Wavelength Division Multiplexing network, comprising ~~the following~~ steps of:

1) multi-casting the data at an input port of [[an]] ~~interconnect~~ a first asynchronous cross-connect to a first connecting path and a first snooping path;

2) multi-casting the data at an input port of ~~at least~~ a second asynchronous cross-connect ~~interconnect~~ to ~~at least~~ a second connecting path and ~~at least~~ a second snooping path;

3) monitoring said first snooping path connected to said multi-cast data with a first [[P]]performance [[M]]monitor, including:

determining the protocol of the data at said first snooping path, and

determining an error rate in accordance with said protocol;

4) monitoring said ~~at least a~~ second snooping path connected to said ~~at least a~~ second multi-cast data with a second [[P]]performance [[M]]monitor, including:

determining the protocol of the data at said second snooping path, and

determining an error rate in accordance with said protocol;

5) comparing the output of said first [[P]]performance [[M]]monitor ~~in step 3~~ with the output of said ~~at least a~~ second [[P]]performance [[M]]monitor ~~in step 4~~; ~~and~~

6) signalling said result[[s]] of the comparing step to an Operation, Administration, Maintenance and Provisioning (OAM&P) sub-system; and

7) at the OAM&P, in response to the result of the comparing step, detecting where performance impairment is introduced.

6.(Amended) The method of Claim 5, wherein the monitoring steps each comprises the following step[[s]]:

1) detecting the line code of a connection[[; and]] to determine said protocol

~~2) detecting the protocol of said connection~~.